



Express Mail No.: EV603557063US

IN THE UNITED STATES PATENT AND
TRADEMARK OFFICE

Application Number: 10/813,465
Applicants: Doyle D. Hendrickson
Filed: March 29, 2004
Title: Folding Cutting System
TC/A.U: 3643
Examiner: David J. Parsley
Attorney Docket: Hendrickson Div III
Customer No. 33549

CERTIFICATE OF EXPRESS MAILING

I, Cheryl A. Swanson, hereby certify to the truth of the following items:

1. I am an employee of Santangelo Law Offices, P.C., 125 South Howes, Third Floor, Fort Collins, Colorado 80521.
2. I have this day deposited the attached Appellant's Brief Pursuant to 37 C.F.R. 41.37 including Appendices along with copies of Shuichi (JP Pat. No. 3-188887), Richardson (US Pat. No. 5,301,432), Saladee (US Pat. No. 579,655), Addis (US Pat. No. 3,839,788), and Jeffcoat (US Pat. No. 5,581,895) references; a Letter of Transmittal along with a Credit Card Payment Form authorized in the amount of \$250.00 for the Appeal Brief fee; this Certificate of Express Mailing; and a Return Receipt Postcard with the United States Postal Service as Express Mail, postage prepaid, for mailing to Mail Stop: Appeal Brief - Patents; Commissioner for Patents; P.O. Box 1450; Alexandria, VA 22313-1450.

Dated this 22nd day of December, 2005.

Cheryl A. Swanson
Cheryl A. Swanson



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LETTER OF TRANSMITTAL

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Dear Sir:

Enclosed for filing are:

1. Appellant's Brief Pursuant to 37 C.F.R. §41.37 including Appendices along with copies of Shuichi (JP Pat. No. 3-188887), Richardson (US Pat. No. 5,301,432), Saladee (US Pat. No. 579,655), Addis (US Pat. No. 3,839,788), and Jeffcoat (US Pat. No. 5,581,895) references;
2. this Letter of Transmittal along with a Credit Card Payment Form authorized in the amount of \$250.00 for the Appeal Brief fee;
3. a Certificate of Express Mailing; and a Return Receipt Postcard.

Please confirm receipt of the documents by applying your date stamp on the enclosed postcard receipt and returning it to me.

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Howes, Third Floor, Fort Collins, CO 80521**

I have this 22 day of December, 2005, either myself personally or through my direction of staff at this office, deposited all of the items in the above letter of transmittal with the United States Postal Service as Express Mail, postage prepaid, in an envelope addressed to: Mail Stop: Appeal Brief – Patents; Commissioner for Patents; P.O. Box 1450; Alexandria, VA 22313-1450.

Dated this 22 day of December, 2005.

Respectfully Submitted,
Santangelo Law Offices, P.C.

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APPEAL BRIEF PURSUANT TO 37 C.F.R. § 41.37

On October 26, 2005, Appellant, Doyle D. Hendrickson filed a notice of appeal from the rejection of claims 1-29 set forth by the U.S. Patent and Trademark Office (hereinafter referred to as the Office) in a final office action mailed April 26, 2005.

What follows is Appellant's appeal brief in accordance with 37 C.F.R. 41.37(c).

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I. REAL PARTY IN INTEREST

The real party in interest in this appeal is the applicant of the instant patent application, Doyle D. Hendrickson.

II. RELATED APPEALS AND INTERFERENCES

None. No other appeals or interferences are known to Appellant or Appellant's legal representatives which may be related to, will directly affect or be directly affected by, or have a bearing on the Board's decision in the pending appeal.

III. STATUS OF CLAIMS

Rejected Claims: 1-29

Claims Appealed: All claims have been finally rejected and are subject to appeal at this time and include claims 1-29.

IV. STATUS OF AMENDMENTS

None. No amendments were filed subsequent to the final rejection.

V. SUMMARY OF CLAIMED SUBJECT MATTER

Generally, the inventive technology as described by the claims involved in this appeal concerns cutting systems and operations of cutting systems having a frame member, blade body member, blade element, acute angle end point, pivot element and blade retention cavity.

Independent Claim 1: Independent claim 1 describes a cutting system having a frame member, a blade body member, a blade element, an acute angle end point, a pivot element, and blade retention cavity. A frame member (2), as shown in figures 1, 2 and 3a, may present a spatial relation to a cutting surface when a cutting instrument is used (see page 8, line 22 and page 8, lines 28-29). A frame member may be designed to hold and apply forces to a blade element (see page 11, lines 5-6). A blade body member (10), as shown in figures 1 and 6b, can be responsive to a frame member and may even pivot with respect to it (see page 11, lines 6-8). A blade element (3), as seen in figures 1, 2, 4, and 5, can be connected (directly, indirectly, or through some intermediate element) to a blade body member and can be held by a blade body member in a variety of ways (see page 11, lines 8-10). A blade element may be entirely removable from a blade body member (see page 19, lines 8-10 and figure 5).

In addition, independent claim 1 includes a blade element having a straight cutting edge (see page 11, line 23). A blade element may include an acute angle end point (31), as shown in figure 5, and may be presented as part of a blade body or a blade itself near (including at) an end (see page 11, line 13 and page 14, lines 13-16). A pivot element (12), as shown in figure 2, can be connected to a frame member and blade body member and can

serve to permit a blade body member to pivot with respect to a frame member (see page 16, lines 21-24). A blade element itself can be pivoted and even inserted and shielded by a portion of a frame member as shown in figures 3a and 3b (see page 16, lines 24-26 and page 17, lines 6-8). This can be accomplished by providing a blade body cavity (11) or blade retention cavity as part of the frame member as shown in figures 3a and 3b (see page 16, lines 24-27).

Independent Claim 19: Independent claim 19 describes a method of operating a cutting instrument. Claim 19 includes manually holding a cutting instrument (1) as shown in figure 1 (see page 8, line 20 and page 29) having a frame member (2) (see figures 1, 2, and 3a, page 8, line 22 and page 8, lines 28-29) and blade element (3) (see figure 5 and page 19, lines 8-10) entirely removably inserted into a blade body member (10) (see figures 1 and 6b and page 11, lines 6-8). A blade element may have a straight cutting edge and an end (see page 11, line 23, page 11, line 13 and page 14, lines 13-16).

Further, claim 19 includes presenting an acute angle end point (31) at an end of a blade element to at least a portion of material (see figure 5, page 11, line 13 and page 14, lines 13-16). In addition, the claim includes cutting at least a portion of a material through action of a cutting instrument and removing the cutting instrument from proximity to the material (see page 3, lines 14-15, page 11, line 17, page 14, lines 25-27). A blade element and blade body member may be pivoted with respect to a frame member and a straight cutting edge of a blade element may be inserted into a frame member (see page 16, lines 21-24, and figures 3a and 3b). Claim 19 also includes shielding at least a portion of a straight cutting edge of the

blade element by the frame member (see figures 3a and 3b, page 16, lines 24-27 and page 17, lines 6-8).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The following grounds of rejection are presented for review:

- I. Whether claims 1, 2, 8-10, 14-16, 19-20 and 22 are unpatentable under 35 U.S.C. § 102(b) as based on a patent to Matsuda Shuichi (JP Pat. No. 3-188887, hereinafter referred to as “Shuichi”);
- II. Whether claims 3 and 21 are unpatentable under 35 U.S.C. § 103(a) as based on the aforementioned Shuichi patent in view of a patent issued to Richardson et al. (U.S. Pat. No. 5,301,432, hereinafter referred to as “Richardson”);
- III. Whether claims 4-7 and 23-26 are unpatentable under 35 U.S.C. § 103(a) as based on the aforementioned Shuichi patent in view of a patent issued to Saladee et al. (U.S. Pat. No. 579,655, hereinafter referred to as “Saladee”);
- IV. Whether claims 11, 12, 17, 18, and 27-29 are unpatentable under 35 U.S.C. § 103(a) as based on the aforementioned Shuichi patent in view of a patent issued to Addis (U.S. Pat. No. 3,839,788, hereinafter referred to as “Addis”); and
- V. Whether claim 13 is unpatentable under 35 U.S.C. § 103(a) as based on the aforementioned Shuichi patent in view of a patent issued to Jeffcoat (U.S. Pat. No. 5,581,895, hereinafter referred to as “Jeffcoat”).

VII. ARGUMENT

A. Rejections under 35 U.S.C. § 102(b) over Shuichi

Claims 1, 2, 8-10, and 14-16.

As the Office is well aware, for a novelty rejection to be proper, the reference relied on must disclose each of the limits of the rejected claim. The MPEP states that "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." MPEP § 2131, Anticipation – Application of 35 U.S.C. 102(a), (b), and (e). As but one of the limits of independent claim 1 of the instant application that Shuichi does not disclose, Appellant respectfully directs the Office's attention to the phrase "said blade element is entirely removable from said blade body member" (used in claim 1). Specific reference is made to figure 5 of the specification as originally filed, where the "removable blade for the instrument" is clearly indicated (see page 7, line 17). A removable blade is also discussed in the specification as originally filed (see, e.g., page 19, lines 7-10). In addition, a blade element may include an acute angle end point at an end. This is shown in figure 5 as well as discussed in the specification as originally filed (see, e.g., page 11, line 13 and page 14, lines 13-16).

Shuichi does not disclose such an entirely removable blade element. The final office action points to figure 1 of Shuichi as an example of a blade element entirely removable from a blade body member. Appellant respectfully disagrees. Figure 1 appears to show a

moveable arm (4) and small knife (7) with respect to a pivot element (22). Figure 1 shows two positions (with reference to the dashed lines) of a moveable arm and knife, however, this is not representative of an entirely *removable* blade. In addition, none of the figures nor the abstract indicate that a blade element can be entirely removable from a blade body member as recited in independent claim 1.

Further, Shuichi does not disclose an acute angle end point. The final office action points to element number 8 in figures 1-4 of Shuichi as an example of an acute angle end point. Again, the Appellant respectfully disagrees. None of the figures show an acute angle end point on a blade element. In fact, the only end point of a blade element that is shown is an obtuse angle end point (having an angle greater than 90°) such as that shown near element 8 in figure 11 of Shuichi. The arm (4) and neck region (5) of the Shuichi paper knife prevent full exposure of a blade in the figures leaving it unknown as to the shape of the rest of the blade. It is respectfully asserted that the Shuichi figures and even the abstract do not disclose an acute angle end point as recited in independent claim 1.

Accordingly, Shuichi does not anticipate the subject matter of independent claim 1 since it does not disclose each and every element as set forth in the claim, namely, a blade element which is entirely removable from a blade body member and a blade element which has an acute angle end point at an end. Simply, neither Shuichi, nor any prior art reference of which Appellant is aware, discloses these features.

Since claims 2, 8-10, and 14-16 are ultimately dependent on claim 1 and incorporate all the limitations of independent claim 1, it is respectfully asserted that the dependent claims are novel over the Shuichi reference for the above reasons (see MPEP 608.01(n) Dependent Claims and 37 C.F.R. § 1.75(c)).

Claims 19, 20 and 22.

As recited above, in order for a novelty rejection to be proper, the reference relied on must disclose each of the limits of the rejected claim. Again, the MPEP states that "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." MPEP § 2131, Anticipation – Application of 35 U.S.C. 102(a), (b), and (e). As but one of the limits of independent claim 19 of the instant application that Shuichi does not disclose, Appellant respectfully directs the Office's attention to the phrase, "a blade element entirely removably inserted into a blade body member" (used in claim 19). Specific reference is made to figure 5 of the specification as originally filed, where the "removable blade for the instrument" is clearly indicated (see page 7, line 17). A removable blade is also discussed in the specification as originally filed (see, e.g., page 19, lines 7-10). Further, attention is brought to the phrase, "presenting an acute angle end point at said end of said blade element to at least a portion of material" (used in claim 19). An acute angle end point is shown in figure 5 as well as discussed in the specification as originally filed (see, e.g., page 11, line 13 and page 14, lines 13-16).

Shuichi does not disclose such an entirely removable blade element. The final office action points to figure 1 of Shuichi as an example of a blade element entirely removable from a blade body member. Appellant respectfully disagrees. Figure 1 appears to show a *moveable* arm (4) and small knife (7) with respect to a pivot element (22). Figure 1 shows two positions of a moveable arm and knife, however, this is not representative of a *removable* blade. In addition, none of the figures nor the abstract indicate that a blade element can be entirely removable from a blade body member as recited in independent claim 19.

Further, Shuichi does not disclose presenting an acute angle end point at an end of a blade element to at least a portion of material. The final office action points to element number 8 in figures 1-4 of Shuichi as an example of an acute angle end point. Again, the Appellant respectfully disagrees. None of the figures show an acute angle end point on a blade element. In fact, the only end point of a blade element that is shown is an obtuse angle end point (having an angle greater than 90°) such as that shown near element 8 in figure 11 of Shuichi. As understood from the abstract and figures of Shuichi, the knife and its *obtuse* angle end point -- not an *acute* angle end point -- would be presented to a material such as an envelope. Even further, the arm (4) and neck region (5) of the Shuichi paper knife prevent full exposure of the blade in the figures leaving it unknown as to the shape of the rest of the blade. It is respectfully asserted that the Shuichi figures and even the abstract do not disclose the acute angle end point as recited in independent claim 19.

Accordingly, Shuichi does not anticipate the subject matter of independent claim 19 since it does not disclose each and every element as set forth in the claim, namely, a blade

element entirely removably inserted into a blade body member and presenting an acute angle end point at said end of said blade element to at least a portion of material. Simply, neither Shuichi, nor any prior art reference of which Appellant is aware, discloses these features.

Since claims 20 and 22 are dependent on claim 19 and incorporate all the limitations of independent claim 19, it is respectfully asserted that the dependent claims are novel over the Shuichi reference for the above reasons (see MPEP 608.01(n) Dependent Claims and 37 C.F.R. § 1.75(c)).

B. Rejections under 35 U.S.C. § 103(a) over Shuichi in view of Richardson.

Claims 3 and 21.

The references supplied – Shuichi and Richardson– do not support a case of *prima facie* obviousness of claims 3 and 21. Respectfully, as the Office is well aware, “[t]he examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness.” MPEP § 2142 Legal Concept of *Prima Facie* Obviousness. The MPEP goes on to state that “[t]o establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.” MPEP 2143, Basic Requirements of a *Prima Facie* Case of

Obviousness. Appellant submits that these three criteria can not be met because, as but one reason, Shuichi and Richardson do not teach or suggest all limitations, either alone or in combination, of claims 3 and 21.

Shuichi and Richardson, either alone or in combination, do not disclose the limits of claims 3 and 21. First, as explained above, the limits of independent claim 1 are included in claim 3 and the limits of independent claim 19 are included in claim 21 because claims 3 and 21 depend from claim 1 and 19, respectively. However, as explained above, Shuichi does not disclose a removable blade element of claims 1 or 19, nor does it disclose an acute angle end point of claims 1 and 19. In addition, Richardson also does not disclose, at the least, the entirely removable blade limit. While the Richardson reference has drawings in which a crown member and blade is removed (see figure 3 and column 2, lines 49-50), the Appellant respectfully points out that this is merely to show the underlying elements in the figures – rather than teaching that a blade is removable. In fact, an entirely removable blade element does not appear in the Richardson disclosure or claims. Accordingly, it is clear that the references that the Office has relied on in its obviousness rejection of claims 3 and 21 do not disclose or teach, either alone or in combination, the limits of claims 3 and 21, as MPEP 2143 requires.

C. Rejections under 35 U.S.C. § 103(a) over Shuichi in view of Saladee.

Claims 4-7 and 23-26.

The references supplied – Shuichi and Saladee– do not support a case of *prima facie* obviousness of claims 4-7 and 23-26. Respectfully, as the Office is well aware, “[t]he examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness.” MPEP § 2142 Legal Concept of *Prima Facie* Obviousness. The MPEP goes on to state that “[t]o establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.” MPEP 2143, Basic Requirements of a *Prima Facie* Case of Obviousness. Appellant submits that these three criteria can not be met because, as but one reason, Shuichi and Saladee do not teach or suggest all limitations, either alone or in combination, of claims 4-7 and 23-26.

Shuichi and Saladee, either alone or in combination, do not disclose the limits of claims 4-7 and 23-26. First, as explained above, the limits of independent claim 1 are included in claims 4-7 and the limits of independent claim 19 are included in claims 23-26 because claims 4-7 and claims 23-26 ultimately depend from claim 1 and 19, respectively. However, as explained above, Shuichi does not disclose a removable blade element of claims

1 or 19, nor does it disclose an acute angle end point of claims 1 and 19. In addition, Saladee, while disclosing a combination ring and knife, does not disclose, at the least, these limits. Accordingly, it is clear that the references that the Office has relied on in its obviousness rejection of claims 4-7 and 23-26 do not disclose or teach, either alone or in combination, the limits of claims 4-7 and 23-26, as MPEP 2143 requires.

D. Rejections under 35 U.S.C. § 103(a) over Shuichi in view of Addis.

Claims 11, 12, 17, 18, and 27-29.

The references supplied – Shuichi and Addis– do not support a case of *prima facie* obviousness of claims 11, 12, 17, 18, and 27-29. Respectfully, as the Office is well aware, “[t]he examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness.” MPEP § 2142 Legal Concept of *Prima Facie* Obviousness. The MPEP goes on to state that “[t]o establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.” MPEP 2143, Basic Requirements of a *Prima Facie* Case of Obviousness. Appellant submits that these three criteria can not be met because, as but one reason, Shuichi and Addis do not teach or suggest all limitations, either alone or in combination, of claims 11, 12, 17, 18, and 27-29.

Shuichi and Addis, either alone or in combination, do not disclose the limits of claims 11, 12, 17, 18, and 27-29. First, as explained above, the limits of independent claim 1 are included in claims 11, 12, 17, and 18 and the limits of independent claim 19 are included in claims 27-29 because claims 11, 12, 17, and 18 and claims 27-29 ultimately depend from claim 1 and 19, respectively. However, as explained above, Shuichi does not disclose a removable blade element of claims 1 or 19, nor does it disclose an acute angle end point of claims 1 and 19. In addition, Addis, while disclosing an eviscerating and skinning knife, does not disclose, at the least, the limit of a removable blade element. Accordingly, it is clear that the references that the Office has relied on in its obviousness rejection of claims 11, 12, 17, 18, and 27-29 do not disclose or teach, either alone or in combination, the limits of claims 11, 12, 17, 18, and 27-29, as MPEP 2143 requires.

E. Rejections under 35 U.S.C. § 103(a) over Shuichi in view of Jeffcoat.

Claim 13.

The references supplied – Shuichi and Jeffcoat– do not support a case of *prima facie* obviousness of claim 13. Respectfully, as the Office is well aware, “[t]he examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness.” MPEP § 2142 Legal Concept of *Prima Facie* Obviousness. The MPEP goes on to state that “[t]o establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge

generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.” MPEP 2143, Basic Requirements of a *Prima Facie* Case of Obviousness. Appellant submits that these three criteria can not be met because, as but one reason, Shuichi and Jeffcoat do not teach or suggest all limitations, either alone or in combination, of claim 13.

Shuichi and Jeffcoat, either alone or in combination, do not disclose the limits of claim 13. First, as explained above, the limits of independent claim 1 are included in claim 13 because claim 13 depends from claim 1. However, as explained above, Shuichi does not disclose a removable blade element of claim 1, nor does it disclose an acute angle end point of claim 1. In addition, Jeffcoat, while disclosing a multipurpose knife with gut hook, does not disclose, at the least, the limit of a removable blade element. Accordingly, it is clear that the references that the Office has relied on in its obviousness rejection of claim 13 do not disclose or teach, either alone or in combination, the limits of claim 13, as MPEP 2143 requires.

Conclusion

For the foregoing reasons, it is submitted that the Examiner's rejections of the claims remaining in the case – claims 1-29 – are erroneous, and reversal of his decisions is respectfully requested.

Dated this 22 day of December, 2005.

Respectfully Submitted:
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VIII. CLAIMS APPENDIX

This appendix presents a clean copy of the claims involved on appeal. These claims are based on the amendments filed on February 24, 2005 prior to the issuance of the final office action.

1. (Previously presented) A cutting system comprising:
 - a frame member;
 - a blade body member which is responsive to said frame member;
 - a blade element connected to said blade body member which is held by said blade body member wherein said blade element is entirely removable from said blade body member and has a straight cutting edge and an end;
 - an acute angle end point presented at said end of said blade element;
 - a pivot element connected to said frame member and said blade body member which permits said blade body member to pivot with respect to said frame member; and
 - a blade retention cavity on said frame member wherein said blade retention cavity is configured to shield at least a portion of said cutting edge of said blade element when said blade body member is pivoted with respect to said frame member.

2. (Original) A cutting system as described in claim 1 wherein said an acute angle end point presented at said end of said blade element comprises a dual straight edge element.
3. (Original) A cutting system as described in claim 1 and further comprising a retaining element that holds said blade element with respect to said blade body member and wherein said retaining element is positioned approximately equidistant between said pivot element and said acute angle end point.
4. (Original) A cutting system as described in claim 1 and further comprising a releasable pivot lock to which said blade body member is responsive and which detachably prevents said blade element from pivoting with respect to said frame member.
5. (Original) A cutting system as described in claim 4 wherein said releasable pivot lock locks said blade element at three roughly orthogonal positions.
6. (Original) A cutting system as described in claim 4 wherein said blade element and said blade body are pivoting elements, and wherein said releasable pivot lock comprises:
 - a locking mechanism to which said blade element is responsive; and
 - a spring element which yieldably urges said locking mechanism against at least one of said pivoting elements.

7. (Original) A cutting system as described in claim 4 wherein said blade element and said blade body are pivoting elements, and wherein said releasable pivot lock comprises:
- a pin to which said blade element is responsive; and
 - a spring element which yieldably urges said pin against at least one of said pivoting elements.
8. (Original) A cutting system as described in claim 1 wherein said blade retention cavity is adapted for insertion of a replaceable blade, and further comprising a retaining element wherein said replaceable blade is adapted to be held against said blade body member by said retaining element.
9. (Original) A cutting system as described in claim 8 wherein said retaining element comprises a single retaining element.
10. (Original) A cutting system as described in claim 1 wherein said frame member has an external frame surface, wherein said blade body member has an external blade body surface, and wherein said external frame surface and said external blade body surface present aligned shapes when said blade body member is pivoted with respect to said frame member so that at least a portion of said cutting edge of said blade element is shielded by said blade retention cavity.

11. (Original) A cutting system as described in claim 1, wherein said frame member comprises a frame member having at least one finger hole.
12. (Previously presented) A cutting system as described in claim 11, further comprising an enhanced friction rotational restraint element located on said frame member adjacent at least one finger hole and substantially diametrically opposed with respect to a thumb rest.
13. (Previously presented) A cutting system as described in claim 1, wherein said cutting edge comprises:
 - a lifting edge; and
 - a retention edge configured such that said lifting edge and said retention edge form an edge concave feature with respect to each other.
14. (Original) A cutting system as described in claim 1, and further comprising a cut material centering element behind at least a portion of said cutting edge.
15. (Original) A cutting system as described in claim 14, wherein said cut material centering element comprises a concave feature.
16. (Original) A cutting system as described in claim 14, wherein said blade body member is tapered and wherein said cut material centering element comprises said tapered blade body member.

17. (Original) A cutting system as described in claim 1 and further comprising a thumb rest to which said frame member is responsive and which in use acts to cause a force which is substantially perpendicular to at least a portion of said blade element.
18. (Previously presented) A cutting system as described in claim 11, wherein said frame member presents a spatial relation with respect to a cutting surface and further comprising a substantially planer lifting edge and a substantially planer retention edge each form an angle with respect to said cutting surface when said frame member is positioned in said spatial relation, and wherein said angle of said substantially planer lifting edge with respect to said cutting surface is less than 90 degrees while the angle of said substantially planer retention edge with respect to said cutting surface is about 90 degrees.
19. (Previously presented) A method of operating a cutting instrument comprising the steps of:
- manually holding a cutting instrument, having a frame member and having a blade element entirely removably inserted into a blade body member wherein said blade element has a straight cutting edge and an end;
 - presenting an acute angle end point at said end of said blade element to at least a portion of a material;
 - cutting at least a portion of said material through action of said cutting instrument;

removing said cutting instrument from proximity to said material;
pivoting said blade element and said blade body member with respect to said frame member;
inserting said straight cutting edge of said blade element into said frame member; and
shielding at least a portion of said straight cutting edge of said blade element by said frame member.

20. (Original) A method of operating a cutting instrument as described in claim 19 wherein said step of presenting said acute angle end point at said end of said blade element to at least a portion of a material comprises the step of presenting said acute angle end point having a dual straight edge element at said end of said blade element to at least a portion of a material.
21. (Original) A method of operating a cutting instrument as described in claim 19 wherein said step of pivoting said blade element and said blade body member with respect to said frame member establishes a pivot point and further comprising the step of retaining said blade element by a retaining element that holds said blade element with respect to said blade body member and wherein said retaining element is positioned approximately equidistant between said pivot point and said acute angle end point.

22. (Original) A method of operating a cutting instrument as described in claim 19 wherein said cutting instrument has a blade back portion and a frame front portion and wherein said step of pivoting said blade with respect to said frame member comprises the step of aligning at least a portion of said blade back portion and said frame front portion.
23. (Original) A method of operating a cutting instrument as described in claim 19 and further comprising the step of locking said blade with respect to said frame member.
24. (Original) A method of operating a cutting instrument as described in claim 23 wherein said step of locking said blade with respect to said frame member comprises the steps of:
- biasing a locking mechanism in the vicinity of said blade element; and
 - positioning at least a portion of said locking mechanism against at least a portion of said blade element.
25. (Original) A method of operating a cutting instrument as described in claim 23 wherein said step of locking said blade with respect to said frame member comprises the steps of:
- biasing a pin in the vicinity of said blade element; and
 - positioning at least a portion of said pin against at least a portion of said blade element.

26. (Original) A method of operating a cutting instrument as described in claim 23 and further comprising the step of releasing said lock after accomplishing said step of locking said blade with respect to said frame member.
27. (Original) A method of operating a cutting instrument as described in claim 19 wherein said cutting instrument has a blade and a blade body member having a slit adapted for insertion of a replaceable blade and a retaining element, and further comprising the steps of:
- removing said blade from said blade body member;
 - replacing said blade with a replacement blade;
 - inserting said replacement blade in said slit in said blade body member; and
 - retaining said replacement blade in said blade body member.
28. (Previously presented) A method of operating a cutting instrument as described in claim 19, further comprising the steps of:
- manually pressing against a thumb rest on said cutting instrument; and
 - manually pressing against a frictionally enhanced portion on said cutting instrument adjacent at least one finger hole and diametrically opposed with respect to thumb rest.
29. (Previously presented) A method of operating a cutting instrument as described in claim 28 wherein said steps of manually pressing against said thumb rest on said cutting instrument and manually pressing against said frictionally enhanced portion on

said cutting instrument act to accomplish a step of creating roughly orthogonal forces
on said cutting instrument.

IX. EVIDENCE APPENDIX

There is no evidence submitted pursuant to 37 C.F.R. §§ 1.130, 1.131 or 1.132. For the Office's convenience, Appellant has attached copies of the five patents as cited in the final office action after page 32 of this paper.

Attachment Evidence Appendix: JP Pat. No. 3-188887 to Shuichi
 U.S. Pat. No. 5,301,432 to Richardson et al.
 U.S. Pat. No. 579,655 to Saladee et al.
 U.S. Pat. No. 3,839,788 to Addis
 U.S. Pat. No. 5,581,895 to Jeffcoat

X. RELATED PROCEEDINGS APPENDIX

None. There are no proceedings identified in 37 C.F.R. 41.37(c)(1)(ii), as indicated in section II above.

PAT-NO: JP403188887A

DOCUMENT-IDENTIFIER: JP 03188887 A

TITLE: PAPER KNIFE

PUBN-DATE: August 16, 1989

INVENTOR-INFORMATION:

NAME

MATSUDA, SHUICHI

ASSIGNEE-INFORMATION:

NAME

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COUNTRY

N/A

APPL-NO: JP01344864

APPL-DATE: December 30, 1989

INT-CL (IPC): B26B003/00, B26B027/00 , B43M007/00

US-CL-CURRENT: 30/123

ABSTRACT:

PURPOSE: To safely and continuously tear the seal section of an envelope by protruding an arm to the outside of a base body so as to have a neck region and a spatula-shaped guide region, and providing a knife edge in the base body so as to be inclined in the front-high and rear-low attitude with respect to the bottom section of a paper piece passage.

CONSTITUTION: A recessed groove 3 is provided at one end section of a base body 2 concurrently serving as the handle of a paper knife 1, an arm 4 protruded to the outside from the base body 2 in no contact through the recessed groove 3 has a neck region 5 on its tip side and a spatula-shaped

guide region 6 continued with no step from the neck region 5, and the knife edge 8 of a small knife 7 obliquely provided in the neck region 5 is inclined in the front-high and rear-low attitude with respect to the bottom section 9 of the recessed groove 3. When an envelope 11 is to be opened with a paper knife 1, the spatula-shaped tip section of the guide region 6 is inserted into one end of the seal section of the envelope 11 and thrust, then the envelope seal section enters a paper piece passage 10, a position regulating action is applied, and it is torn by a knife edge 8 located in the passage 10. The guide region 6 is not released from the seal section in the tearing process, and the envelope seal section can be continuously torn.

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⑨ 日本国特許庁(JP)

⑩ 特許出願公開

⑫ 公開特許公報(A) 平3-188887

⑮ Int. Cl.⁵

B 26 B 3/00
27/00
B 43 M 7/00

識別記号

庁内整理番号

B 7234-3C
A 7234-3C
7265-2C

⑬ 公開 平成3年(1991)8月16日

審査請求 有 請求項の数 5 (全6頁)

⑭ 発明の名称 ペーパーナイフ

⑯ 特 願 平1-344864

⑰ 出 願 平1(1989)12月30日

優先権主張 ⑱ 平1(1989)9月11日 ⑲ 日本(JP) ⑳ 特願 平1-235469

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明 細 書

1 発明の名称

ペーパーナイフ

2 特許請求の範囲

(1) 取っ手を兼ねた基体が、その一端部に凹溝を有し、前記基体から前記凹溝を通じて非接触に基体外へ突出したアームが、前記凹溝との間に紙片通路を設定するためのネック領域と、ヘラ状のガイド領域とを有し、前記紙片通路を通じて望見される基体内に斜設されたナイフエッジが、前記紙片通路の底部に対して前高後低の姿勢となされていることを特徴とするペーパーナイフ。

(2) 前記凹溝と前記ネック領域およびガイド領域との間に設けられる紙片通路は、断面略VないしU字状に設定され、かつ紙片通路の幅は、前記ガイド領域側で広く、その反対側で狭いことを特徴とする請求項1に記載のペーパーナイフ。

(3) 前記ガイド領域は、そのヘラ状先端側から前記ネック領域側に張り出して、前記ナイフエッジの前方を一部遮る折り目押入用突部を有してい

ることを特徴とする請求項1もしくは2に記載のペーパーナイフ。

(4) 前記ネック領域から前記ガイド領域にかけてへ字状に形成したアームの先端が、折り目案内用突部となされていることを特徴とする請求項1もしくは2に記載のペーパーナイフ。

(5) ナイフエッジの要部を側面から望見できる切り欠きが、基体の一側面から凹溝を通じて他側面側に貫通形成されていることを特徴とする請求項1ないし4に記載のペーパーナイフ。

3 発明の詳細な説明

<産業上の利用分野>

本発明は、二つ折りにされた紙片や封筒の封止部等を折り目に沿って切り裂くのに適したガイド機能を有するペーパーナイフに関するものである。

<従来の技術>

一般に、封書を開封するさい、はさみまたはナイフを用いることになるが、前者による開封は封筒の一辺に沿う部分を細幅に切除するのであるから非常に煩わしく、しかも、封入物まで切断して

(1)

(2)

しまう恐れがある。また、後者は刃先の尖ったものを必要とするので非常に危険であるのみならず、常に折り目に沿って開封できるという保証はなく、しかも、封止部に挿入したナイフが切断のはで封止部から脱出しやすく、このようなことがあるとナイフを再び封止部に挿入しなければならない煩わしさがある。

<発明が解決しようとする課題>

したがって本発明の目的とするところは、二つ折りにした紙片の折り目や、封筒の封止部を、その稜線に沿って安全に、かつ連続的に切り裂けるガイド機能を備えたペーパーナイフを提供することにある。

<課題を解決するための手段>

本発明は、取っ手を兼ねた基体の一端部に凹溝を形成し、前記基体から前記凹溝を通じて非接触に基体外へ突出したアームが、前記凹溝との間に断面略VないしU字状の紙片通路を設定するためのネック領域と、へら状のガイド領域とを有し、前記紙片通路を通じて望見される基体内に設けら

れたナイフエッジは、前記紙片通路の底部に対して前高後低の姿勢に斜設されている。

なお、アームのガイド領域に、そのへら状の先端側からネック領域側に張り出して、前記ナイフエッジの前方を一部遮る折り目押入用突部を形成すれば、該突部の押入機能によって、紙片の折り目すなわち稜線部を、紙片通路底部の幅の狭い位置に確実に送り込むことができる。

また、アームのネック領域からガイド領域に至る先端部をへ字状に形成し、切断時に紙片の折り目に挿入する際のガイド領域の傾斜角度を自在に選択すれば、封止部までいっばいに内容物の詰まった不都合な封筒の開封と、正確な直線状の裁断を要求される包装紙等の切り裂きに、自在に対応することができる。

なお、ナイフエッジの要部を基体外から望見できる切り欠きを、基体の一側面から凹溝を通じて他側面側に貫通形成すれば、ナイフエッジに付着して切断の障害となる微細なごみや紙屑等を、極めて容易に発見し、かつ速やかに排除することが

(3)

(4)

できる。

<作用>

このように構成されたペーパーナイフを用いて封筒を開封するには、封筒封止部の一端にガイド領域のへら状先端部を割り込ませ、そのまま他端側へ移動させるだけでよい。この移動によって紙片通路に入り込んだ封筒封止部は小刀のナイフエッジで切り裂かれていくのであり、したがって前記ガイド領域は封筒封止部の一端を探り出すへらの役割と、封筒をその折り目に沿って小刀側へ送り込むガイド的役割とを果たすことになる。また、ガイド領域は凹溝との間に紙片通路を設定するものであるから、鋭利なナイフエッジを備えず、これに触れても危険でないし、これをもって切り裂くのではないから、切断の過程で封止部または折り目から脱出することがなく、連続した切断作業が可能となり、かつ、凹溝のストップ機能によってナイフエッジの封筒内への深い入り込みが阻止されるので、封筒の内容物を傷つけることがない。

なお本発明に係るペーパーナイフは、封筒の封止

部や二つ折りにされた紙片を、その稜線部分で正確かつ連続的に切り裂くことができるのみならず、折り目のない紙片に対しては自ら折り目を付ける作用をもなす。すなわち、折り目のない紙片はその所望箇所でループ状につまみあげ、ここへガイド領域を差し込んで押し進めていくと、紙片通路に入った紙片は順次に二つ折りにされ、ついで、ナイフエッジで連続的に切り裂かれていく。

このように、ガイド領域と紙片通路とは、ナイフエッジ側へ進行する紙片を折り目部分で支える先導的役割を果たすのみならず、折り目のない紙片に対しては自ら折り目を与える作用をもなし、折り目部分で支えられて横ぶれを規制された紙片はナイフエッジに至っても曲がることなく進行し、折り目の稜線部分で直線状に切り裂かれる。

<実施例>

つぎに本発明を図面に示した実施例とともに説明する。

第1図ないし第4図は本発明の一実施例であって、第1図は斜視図、第2図は一部断面側面図、

(6)

(5)

第3図は平面図、第4図は第3図B-B線の拡大断面図であり、第2図A-A線の位置は第3図B-B線の位置と同一である。

第1図によって明らかなように、ペーパーナイフ1の取っ手を兼ねた基体2が、その一端部に凹溝3を有し、前記基体2から前記凹溝3内を通じて非接触に基体2外へ突出したアーム4は第2図によって明らかなように、その先端側にネック領域5と、該ネック領域5から無段階に連続するへら状のガイド領域6を有し、ネック領域5に斜設された小刀7のナイフエッジ8は、凹溝3の底部9に対して前高後低の姿勢となされている。第4図は、第3図B-B線の拡大断面図であって、凹溝内を非接触に通って突出したアーム4は、凹溝3の側壁との間に断面略V字状の間隙、すなわち底部で狭く上部で広い紙片通路10を有しており、かつ紙片通路平面の幅は、第3図によって明らかなように、ガイド領域側すなわち先端の開口部側で広く、その反対側で狭くなされている。なお、第3図B-B線の位置は第2図A-A線の位置と

(7)

そのまま他端側へ移動させると、この移動によって紙片通路10に入り込んだ紙片は、折り目を内側からガイドする押入用突部15の働きによって、折り目の捩れや、横ぶれ、浮き上がり等の不都合を起すことなく、その稜線部を紙片通路の狭い底部に案内し、図面に示すE-E線に沿って進させるので、特に正確な裁断が必要な大型包装紙などの直線状の切り裂きを、極めて容易に、かつ、狂いなく実施することができるのである。

なお第7図も、同じく本発明の他の実施例を示す一部断面側面図であって、この実施例のアーム16の先端部は、第2図に示すアーム4および第6図に示すアーム12と異なり、そのネック領域17からガイド領域18にかけてへ字状に屈曲形成されている。

すなわち、本実施例に係るこのペーパーナイフの特徴は、屈曲形成されたアーム16の先端部を紙片の折り目に差し込む際、その押入の角度を変えることによって、正確な直線状の裁断を要する包装紙などの大型紙の切り裂きと、封止部まで一杯

(9)

同一である。

第5図は、前述のように構成されたペーパーナイフ1を用いて封筒11を開封する要領を説明するためのもので、まず、ガイド領域6のへら状先端部を封筒封止部的一端に差し込んで、これを図示矢印の方向に押し進めていくと、封筒封止部は紙片通路10に入り込んで位置規制作用を受けつつ、同通路内に位置するナイフエッジ8で切り裂かれていくのであり、この切り裂きの過程でガイド領域6が前記封止部から脱出することなく、速的に切り裂きが出来る。

第6図は本発明の他の実施例を示す一部断面側面図であって、ペーパーナイフ1のアーム12は、第2図に示すアーム4と異なり、そのガイド領域13のへら状先端側から、ネック領域14側に張り出して、ナイフエッジ8の前方を一部遮る折り目押入用突部15を有している。なお押入用突部15の働きは次のとおりである。

すなわち、二つ折りにした紙片の折り目の一端に、アーム12のガイド領域13を割り込ませ、

(8)

に内容物の詰まった不都合な封筒の開封等の、相反する条件物の切断を、選択的に、かつ簡便に実施し得るところにある。

第8図および第9図は、この実施例のペーパーナイフを用いて、紙片19の切り裂きと、封筒20の開封を行う要領を示したものである。

第8図は二つ折りにされた紙片19の折り目を切り裂く要領を示すもので、折り目に割り込ませたアーム16の直線状のネック領域17は、紙片19の折り目すなわち稜線に対してほぼ平行な角度に挿入されており、そのままの角度で他端側へ移動させると、ネック領域17からへ字状に屈曲したガイド領域18の先端部は、紙片19の折り目を内側から押して、その稜線部を、紙片通路10の狭い底部すなわち、第7図F-F線の通過する線に送り込む、折り目案内用突部21となり、また、折り目の浮き上がりや、捩れを防止するガイド的役割を果たして、狂いのない直線状の切り裂きを実施させる。

第9図も前記ペーパーナイフを用いて、封筒20

(10)

の封止部を切り裂く要領を示すものであるが、この第9図において封止部の一端に割り込ませたアーム16の挿入角度は、前記第8図において紙片19に挿入した同アーム16の角度と異なり、そのガイド領域18のへら状直線部は、封筒20の封止部稜線に対して略平行に挿入されており、その移動とともに紙片通路内に進入する稜線部は、第7図に示すG-G線上を通り、ナイフエッジ8に触れて切り裂かれるのである。なお、封筒20の封止部に割り込ませるガイド領域18を、前記の挿入角度に設定する理由および利点は、その切断する封筒の状態にもよるが、たとえば大量の内容物によって封止部まで分厚く膨れた封筒を開封する場合に、その分厚い封止部が紙片通路の狭い底部につかえて切断不可能となる不都合を回避するためである。

すなわち、前記G-G線が通る紙片通路部分の幅は、凹溝の入口側から、断面V字状の紙片通路上部に至る、広い間隙部分であるから、封筒の封止部がG-G線上を通る角度、すなわち、第9図

(11)

きる通孔23が、一側面から凹溝を通じて他側面に貫通形成されており、ナイフエッジやその近傍に付着した微細な紙屑等の汚れは、この通孔23によって極めて容易に発見され、かつ速やかに処置されるのである。

なお第11図は、前記第10図の一部欠損拡大側面図であって、その紙片通路10の底部9の小刀7側の端部と、これに向き合うナイフエッジ8との間には僅かな隙間、すなわち間隙部24が形成されているので、紙片通路内に進入した紙片の折り目が、底部9を超えてナイフエッジ8に当接する際、稜線の先端部分に発生する折り目の変形が極めて有効に防止され、切り損じのない切断を効率よく実施できるが、またこの間隙部24の形成は、ナイフエッジ8に付着した微細なごみや切り屑等を自動的に排除することを可能にした。すなわち、微細なごみ等がナイフエッジに付着して切断不良となった場合でも、それらの汚れは、切断のために続いて進入する紙片によって自動的に押し出され、間隙部24を通してナイフエッジ8

(13)

に示すガイド領域18の挿入角度で封止部の切断を実施すれば、分厚く詰まった封筒であっても、紙片通路に詰まって切断不可能になる等の恐れがないので、支障なく、かつ、素早く開封ができるのである。

なお紙片の切り裂きによって、ナイフエッジ部分に微細な切り屑や汚れが付着し、切断不可能となることがあるが、その汚れを取り除く一手段としては、たとえば第1図に示すように、アーム4の基部に支軸22を形成し、二点鎖線で示す位置へアーム4の先端部を跳ね上げれば、刃部に付着した汚れを容易に取り除くことができる。

なを第10図および第11図も、ナイフエッジ8に付着した不都合な汚れを速やかに発見し、かつこれを除去するためになされた実施例であって、その手段や構造等の実施態様を、第6図の実施例において示したペーパーナイフによって具現したものである。

すなわち第10図において示す基体2の側面部には、ナイフエッジ8の要部を基体外から望見で

(12)

の末端部を離れ、通孔23内に落下して、速やかに排除されるのである。

なお前記実施例では通孔23を形成したが、これは円形に限定されず、方形や、三角形等であってもよく、要するに切り欠きであればよい。

また通孔23や、間隙部24の形成は、実施例に引用した第6図のペーパーナイフのみに限定されないことは勿論である。

なお同一ペーパーナイフ内に通孔23すなわち切り欠きと、間隙部24を併設せず、例えば切り欠きのみ、もしくは間隙部のみを単独に形成することは自由であるが、切り欠きと間隙部を併設すれば、より優れた相乗効果を得ることができる。

<発明の効果>

以上のように本発明は、封筒の開封または二つ折りにされた紙片の切り裂きを、その折り目に沿って行う作業を容易かつ安全に、しかも、効率よく達成せしめるペーパーナイフを提供するものであり、とくに、そのガイド機能はナイフエッジに送り込まれる直前の紙片に位置規制作用を与えるの

(14)

みならず、ナイフ刃が封筒内物を傷付けるのを防ぎ、また、ガイド領域は、ガイドとしての作用に加えて切断部からのナイフ刃の脱出を防止し、かつへらの作用おもし、また凹溝は封筒の折り目部分に跨乗してナイフ刃の封筒内への深い入り込みを阻止するストップ機能と、折り目部分の広がりを防止して曲がりのない正確な切断を行わせる挟みつけ機能を有し、特にその挟みつけ機能は、凹溝内に送り込まれる折り目のない紙片に対しても自ら折り目をもうけ、これを紙片通路内に導入させることによって、簡便に直線状の切断を実施させる等の、頗るすぐれた実用的効果を有する。

4. 図面の簡単な説明

第1図ないし第4図は本発明の一実施例であって、第1図は斜視図、第2図は一部断面側面図、第3図は平面図、第4図は第3図B-B線の拡大断面図、第5図は前記実施例のペーパーナイフを用いて封筒の封止部を切り裂く要領を示したものである。第6図は本発明の他の実施例を示す一部断面側面図、第7図も同じく本発明の他の実施例を

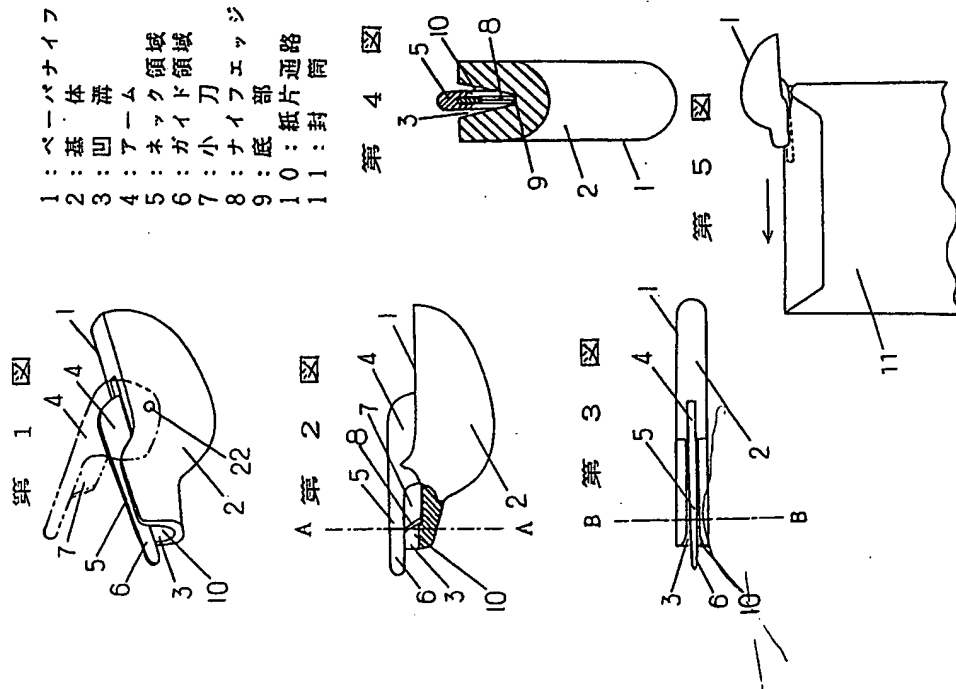
示す一部断面側面図であって、第8図および第9図はその使用要領を示すものである。また第10図も本発明の他の実施例を示す側面図、第11図も同じく、実施例を示す一部欠損拡大側面図である。

- | | |
|-----------|----------|
| 1…ペーパーナイフ | 2…基 体 |
| 3…凹 溝 | 4…アーム |
| 5…ネック領域 | 6…ガイド領域 |
| 7…小 刀 | 8…ナイフエッジ |
| 9…底 部 | 10…紙片通路 |
| 11…封 筒 | 12…アーム |
| 13…ガイド領域 | 14…ネック領域 |
| 15…押入用突部 | 16…アーム |
| 17…ネック領域 | 18…ガイド領域 |
| 19…紙 片 | 20…封 筒 |
| 21…案内用突部 | 22…支 軸 |
| 23…通 孔 | 24…間隙部 |

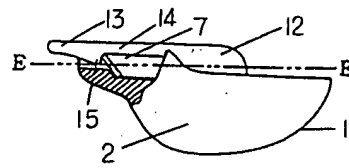
特 許 出 願 人 松 田 修 一

(1 5)

(1 6)

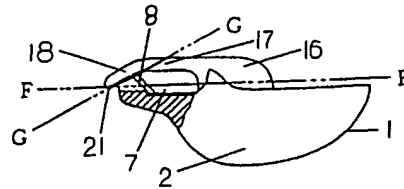


第 6 図

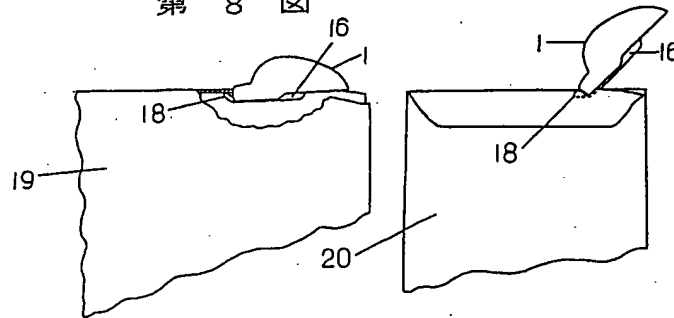


- 12 : アーム
- 13 : ガイド領域
- 14 : ネック領域
- 15 : 押入用突部
- 16 : アーム
- 17 : ネック領域
- 18 : ガイド領域
- 19 : 紙片
- 20 : 封筒
- 21 : 案内用突部

第 7 図



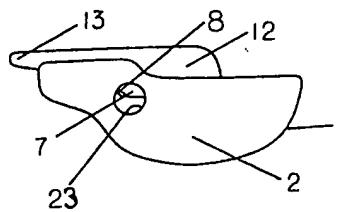
第 9 図



第 8 図

- 1 : ペーパーナイフ
- 7 : 小刀
- 8 : ナイフエッジ
- 9 : 底部
- 10 : 紙片通路
- 12 : アーム
- 13 : ガイド領域
- 15 : 押入用突部
- 23 : 通孔
- 24 : 間隙部

第 10 図



第 11 図

